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A cyst in a stone?

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Figure 1 | Radiopacity at the lateral aspect of the left renal shadow (asterisk) containing a round, negative filling defect (arrow).

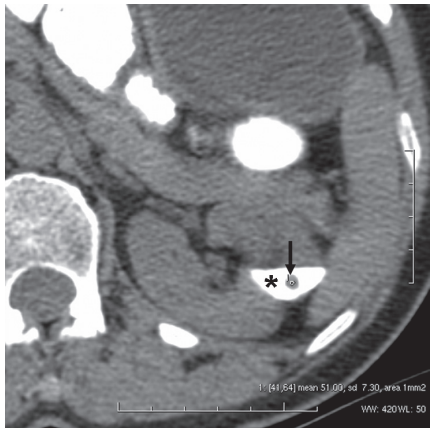

Figure 2 | Non-enhanced abdominal computed tomography scan revealing a polypoid nodule (arrow) (the filling defect seen on the radiograph) embedded in the milk of calcium (asterisk) within a sealed calyceal diverticulum.

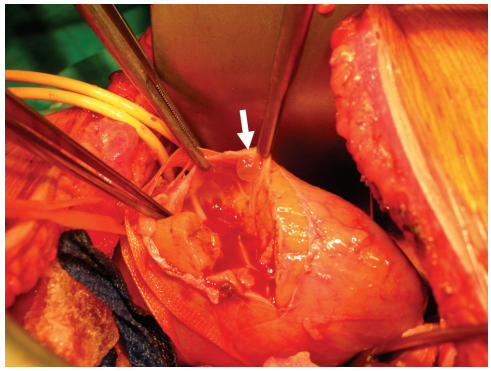

Figure 3 | Intraoperative photograph reveals a small cyst (arrow) at the wall of the calyceal diverticulum.

An abdominal radiography of a 58-year-old woman for the lumbar spine revealed a large calcified structure in the left renal area, containing a small, round filling defect at the superior aspect (Figure 1). The stone did not communicate with the renal calyces in a subsequent intravenous urography study. A calyceal diverticulum with stone impaction was considered. For further evaluation of the filling defect, non-enhanced abdominal computed tomography scanning showed a 2.6 cm calyceal diverticulum in the lateral aspect of the left kidney with a fluid-fluid level due to the milk of calcium. A small polypoid nodule (the filling defect seen on plain films) embedded in the milk of calcium was discernible and was clearest in the wide window level (Figure 2). Partial nephrectomy was planned, given the clinical impression of cystic renal-cell carcinoma due to enhancement of this intramural nodule after contrast-medium administration. During surgery, toothpaste-like milk of calcium in a sealed calyceal diverticulum was confirmed. Further, the filling defect turned out to be a small cyst at the lateral wall of the diverticulum (Figure 3). The pathology confirmed a simple cyst without evidence of malignancy. The finding of gas-containing calculi is usually associated with infection. A cyst in a calyceal diverticulum filled with milk of calcium has a similar appearance.